Innovation and clustering in Montreal: between a product-oriented and a competence-oriented approach

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Outline

1. Problematique, theoretical points and question
2. The question of Clusters in Montreal
3. Three sectors: Aerospace, medical devices, clothing
4. Synthesis
5. Convergences

1) Problematique, theoretical points and question

- The problem we want to address deals with productive actors systems orientations (LPS to make it simple) and their potential concerning local resources available
- Choosing one orientation ore another is not a minor decision: it should contribute to the valorization of all the resources
- Concerning LPS, there are two kinds of actors
  1. Productive actors (entrepreneurs or representatives): interactions are productive, vertical and sectoral.
  2. Social actors (intermediate, territorial) : interrelations are rather informational and horizontal
- The challenge of a metropolitan strategy is to link both, facilitating productive relationships and the diffusion of transversal information

Product orientation vs Competence orientation

Authors essentially invoke two schools of thought to explain productive systems

a) Product Oriented Systems:

- Links between partners are essentially sectoral
- Relevant actors are part of a value chain
- Innovations are essentially technological and pulled by the market

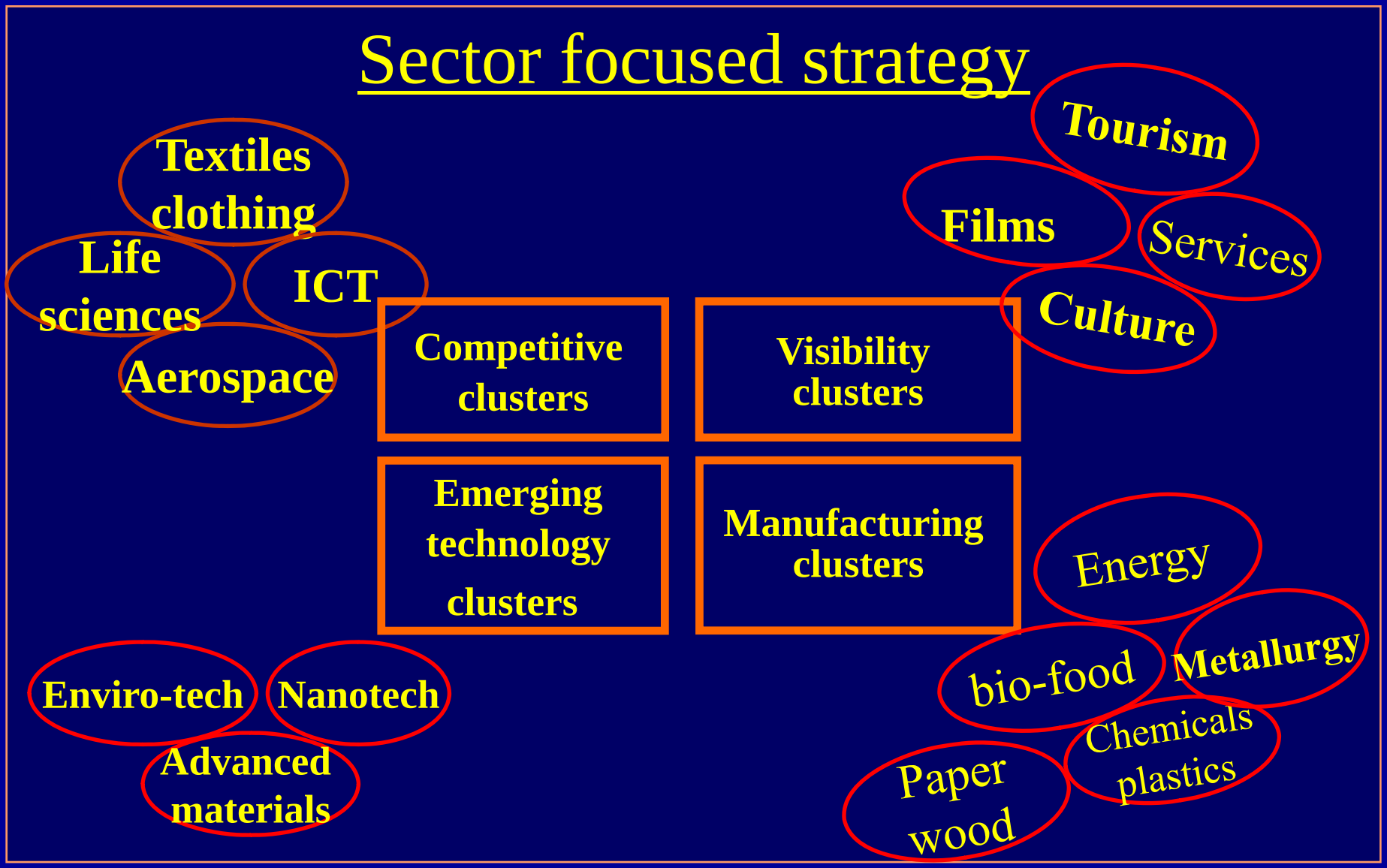
b) Competence oriented systems:

- Links between partners are transversal
- Relevant actors are mainly institutions
- Innovations are essentially social (or organizational) and pushed by public, private and social actors

Question

On the basis of the Montreal case, our question is : are the directions followed by Montreal LPS strategies leading to the best valorization possible of local resources, given the number of actual or potential social stakeholders in the metropolis?

2) The CMM policy: 15 clusters in 4 categories



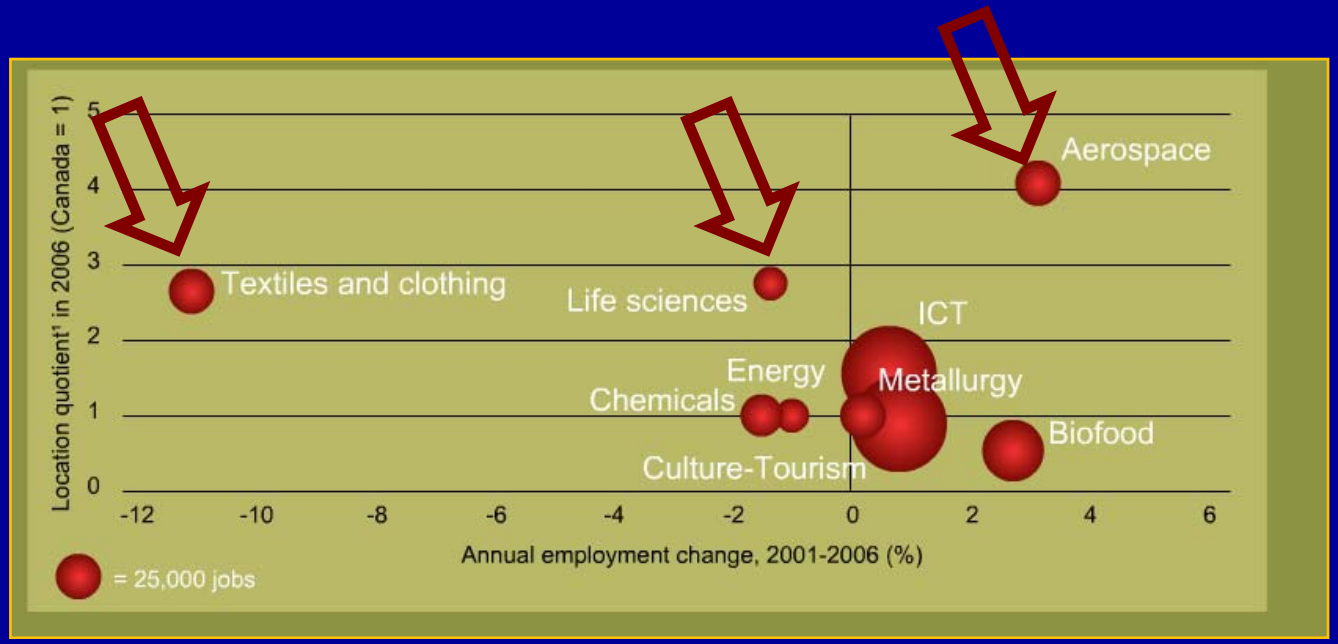
3) Three Case Studies

Textiles clothing

Life sciences

Aerospace

- They have a major impact on the Montréal economy
  - a) Aerospace Industry, b) Medical devices, c) Clothing
  - Important Montreal economy specialisations performing very differently



The template for case studies

- System of Actors
- Governance Issues
- Leadership
- Identity
- Innovation Process Interactions
- Funding

The Aerospace cluster

System of Actors

- Domination of the prime contractors (Bombardier, Bell, CAE, Pratt)
- Important support from governments
- structured network of intermediate stakeholders: Aéro Montréal, AQA,

"For aerospace they (governments) have a big role especially for the great projects. For example, if Bombardier launches a new project of plane, they have a role to take part in the financing of that. Then, they have a role to support the companies, by the programs in R& D" (Int. Org)

The Aerospace cluster

Governance

- Arrangement between the most important firms (prime contractors) and the 4 more important intermediaries (CRIAQ, AQA, CAMAQ, Aéro Montreal);

The Aerospace cluster

Leadership

- Domination of the prime contractors (Bombardier, Bell, CAE, Pratt)

"The prime contractors are independent. They have their own agenda, they are "big boys". In terms of leadership it is always important that the prime contractors be present" (sectoral association)

The Aerospace cluster

<u>Identity</u>:

- Sense of belonging to the territory and to the sector
- Sector based pride

"we have a nice atmosphere, a common culture" "it's a small network"

"Montréal is the 3rd aerospace centre in the world after Toulouse and Seattle",(sectoral association)

The Aerospace cluster

<u>Innovation process</u>:

- Collaborations driven by the prime contractors
- Long and expensive process: C-Series

Market-pull innovation: « in the aerospace, innovation always starts with the customers » (Prime Contractor)

MEDICAL DEVICES

System of Actors

- Health Departments and entrepreneurs
- Dominant actors are related to market and product
- Research partnership

« ... A lack of knowledge at any step could mean a product fails to reach the market … » A networking organisation advisor

MEDICAL DEVICES

Governance

- Emerging
- Atomized
- Hierarchical and decentralized
- Production –based networking
- Local scale

« .. Since two years, this sector has evolved, a synergy is now possible with different actors … »

(A networking organisation advisor)

MEDICAL DEVICES

Leadership

- Public research
- Health Departments homologation
- Few large customers (Insurance and government)

« I cannot sell a product without an authorization, it is a universal condition» (An Industrial technology Advisor)

MEDICAL DEVICES

Identity

- Medical cause
- Improving quality of life

« … my neighbours have had hip replacements. They have traded their wheelchair for golf clubs since .» (An officer of a manufacturing association)

MEDICAL DEVICES

Innovation process

- Shared use of transversal competencies
- Link with end-users
- Compliance to standards
- Input from main users (M.D.)

« not only will I sell the product but I will have to change the way users do things, I will have to train them on a new procedure» (An Industrial technology Advisor)

Clothing-Fashion

System of Actors

- A large number of small entrepreneurs (contractors and subcontractors)
- Organizational weakness

Governance

- Lack of a sector level agency
- Switch toward fashion creation

Leadership

- A transformation process
- Ethical orientations
- A vacuum of power filled by public agencies

Identity

- Many identities

«We really need to support each other (…) it takes at least support between us, the new actors of the industry. With cooperation, I think we can really rebuild the industry (a young designer)

Clothing-Fashion

Innovation process

- Marketing of distinctive products (*Myco Ana*)
- Link between designers and shops (Simons and Dubuc)
- CEDC: LABCreatif, cooperation with school, sewing group)
- Adjustment programs
- Appropriation of new technologies

« …favour the establishment of firms in fashion design by facilitating synergy between entrepreneurs, by offering common resources and sharing of expertise .» (source: www.labcreatif.ca)

4 Synthesis of main topics

Governance

Aerospace	Medical Devices	Clothing-Fashion	Convergence
• Consolidated • Hierarchical, centralized • Arrangement large firms/ intermediate organizations • Metropolitan scale	• Emerging, atomized, • Hierarchical, decentralized • Networks linked to products • Local scale	• Reconfiguration under the public impulse • Atomized and decentralized • Oriented towards creativity (fashion) • Localized in districts	• Importance of sectoral dimension • Scale linked to the type of productive interaction and to the localization of actors

Leadership

Aerospace	Medical Devices	Clothing-Fashion	Convergence
• Prime contractors' domination • Interactions between the large firms and subcontractors traitants • Value chain is determinant • Importance of Airlines	• State (NSERC-IRAP; HealthCanada) • Large clients • Market-driven • Link between medical doctors and entrepreneurs	• Leadership is more open, diffuse • Ethical orientation is emerging • Sectoral interactions which are diffuse and atomized	• Strong leadership when strong productive integration • Presence of the CMM (cluster policy) • Integration linked to product

Interactions for innovation

Aerospace	Medical Devices	Clothing-Fashion	Conver-gence
• Cooperation with sub-contractors • Long and complex process • Strong collaborations in R&D	• Transversal competencies are put together • Links with the users • Adaptation to norms • Importance of the dominant clients (M.D.)	• New products (ethical) • Association between designers and manufacturers • Importance of subsectors (fur, sports, outdoors)	• Importance of the market, beyond some local cooperation

Funding

Aerospace	Medical Devices	Clothing-Fashion	Convergence
• Risk-sharing between large firms and subcontractors • Government • Union-management cooperation	• Venture - Capital is available • Federal government (IRAP)	• Private Capital • Partnership between government and community org. for revitalization of districts	• Importance of government support

Conclusion

- Knowledge flows and transversal interactions for innovation are observed in emerging practices
- They are more visible within the more atomistic sectors
- Competence-oriented approach appears as an alternative option
- But this is clearly not the dominant orientation instituted by the CMM
- We can wonder if the official cluster policy is not reinforcing the sectoral trends and reducing horizontal interactions
- The organizational richness of Montréal is thus not fully exploited